

Summary of EPA Water and Energy Efficiency Meeting

Chicago, Illinois

March 5, 2008

Objectives

The United States faces mounting challenges in meeting ever-growing demand for energy and water, including ageing infrastructure, system capacity constraints, and the need to address and the impacts of global climate change. To address all or some of these issues, various organizations in some parts of the country have developed and delivered energy efficiency and water efficiency initiatives. These local, state, and regional sponsors now have established track records of delivering cost-effective resource savings, and many of these initiatives leverage the federal government's energy and water efficiency programs, ENERGY STAR[®] and WaterSense[®], administered by the U.S. Environmental Protection Agency.

Meeting the challenges of the future will require even more efficient use of energy and water resources in our homes, commercial buildings, and industries. As energy and water efficiency initiatives target many of the same products, practices, and economic sectors, exploiting these synergies in program design and delivery is likely to minimize lost opportunities and increase overall program cost-effectiveness. Developing new strategies and collaborations to jointly promote energy and water efficiency will be an important element of meeting future energy and water supply challenges.

In March 2008, EPA's Office of Air and Radiation (OAR) and Office of Water (OW) convened a one-day meeting in Chicago to bring together leaders in energy efficiency and water efficiency to share information and strategies for the combined advancement of energy and water saving goals. An attendee list is provided in Attachment A.

Participants reached agreement on the following objectives for this initial meeting:

1. Identify key opportunities for cooperative advancement of energy and water efficiency objectives, including successful program models delivering water and energy savings benefits, and successful collaborations between water and energy utilities that could be replicated in other jurisdictions.
2. Identify challenges hindering greater collaboration between water and energy efficiency initiatives.
3. Identify near-term and longer-term next steps for addressing these challenges and promoting greater collaboration between water and energy efficiency initiatives.

Opportunities

After reaching consensus on the meeting objectives, participants shared experiences and lessons learned from recent water and energy efficiency collaborations, and discussed key elements that must be in place in order for such partnerships to be successful. Participants identified a broad range of opportunities to explore for promoting the cooperative advancement of energy and water efficiency objectives:

- **Ensuring that efficiency is evaluated on a level playing field** against supply-side options when considering new water infrastructure, supply, or disposal projects, as well as energy generation, transmission, or distribution projects.
- **Replicating program models** where past water/energy collaboration efforts have been successful. Examples include:
 - Targeting “low-hanging fruit” by promoting efficient products that use hot water, such as clothes washers, aerators, and showerheads.
 - Targeting high opportunity sectors that are water- and energy-intensive, such as commercial kitchens, commercial laundries, food processing plants, and medical facilities.
- **Developing better metrics** for estimating the energy savings associated with saving water (embedded energy).
- **Developing collaborative training models** to educate employees, customers, and trade allies on energy and water savings benefits associated with efficiency measures.
- **Minimizing lost opportunities and increasing program cost-effectiveness** by providing consumers information on water and energy savings opportunities at the same time.
- **Developing new tools to provide better information on the life cycle costs and benefits** of investments in energy- and water-efficient products.
- **Promoting joint labeling** to help consumers identify energy- and water-efficient products.
- **Offering financing mechanisms** to support investment in water and energy efficiency upgrades, such as low-interest loan programs or performance contracting offerings.
- **Creating new avenues for information exchange**, including information on successful water/energy efficiency initiatives that could be replicated, and a clearinghouse for information on emerging energy- and water-efficient technologies.
- **Promoting deployment of advanced metering and “smart grid” infrastructure** to provide real-time information on water and energy usage and associated costs.
- **Promoting linkages between water efficiency, energy efficiency, and “green”/sustainability initiatives**, while ensuring consistent information that minimizes consumer confusion.

Challenges

While coordinated water/energy efficiency initiatives have the potential to increase the overall cost-effectiveness and impact of individual resource conservation efforts, a number of barriers limit broader deployment of joint efficiency initiatives. Participants identified the following key challenges hindering collaboration between water and energy efficiency initiatives:

- **Institutional barriers:** Water and energy utilities may lack experience with pursuing coordinated efficiency initiatives, and may lack a clear top-down directive to pursue such coordination. Water and energy utilities may also have different organizational cultures, priorities, timelines, and risk tolerance. Within utilities, organizational silos (for instance, between electric and gas divisions or residential and commercial divisions) are also common impediments to effective coordination.
- **Regulatory barriers:** Water and energy utilities often have different regulatory oversight structures and are usually subject to different goals and requirements for their efficiency initiatives. Utilities may lack appropriate regulatory directives or incentives to undertake collaborative water/energy efficiency initiatives.
- **Geographic barriers:** Service territories of water and energy utilities often do not align geographically, which adds to administrative complexity and affects customer eligibility for jointly-offered incentives.
- **Allocation of costs and benefits:** It may be challenging to quantify and reach agreement on the allocation of costs and benefits of jointly-administered programs, which is necessary to ensure ratepayer equity.
- **Water/energy tradeoffs:** Where tradeoffs between energy and water conservation exist, metrics should be developed to help identify and quantify the magnitude of such tradeoffs so decisions can be made based on an understanding of the tradeoffs and the total costs of utilities.
- **Data sharing issues:** Effective collaboration may necessitate sharing customer data as well as demographic/market opportunity data, but utilities are often reluctant to share data due to concerns about confidential and proprietary information.
- **Billing cycle differences:** Where energy is billed monthly, water bills are often issued on a less frequent basis, such as quarterly. The delayed billing cycle for water means it is more difficult to make a compelling value proposition for investment in efficiency, and makes it more difficult for customers to see the savings impact from their investment.
- **Informational barriers:** There is a need for better tools and resources to communicate joint opportunities for water and energy savings.

Next Steps

After identifying opportunities and challenges, participants agreed upon action items to be undertaken as follow up to the day's discussion, with the goal of promoting the combined advancement of energy and water saving objectives. Action items were divided into three main categories: programs and practices, metrics, and policy. Below is a summary of the areas where participants have committed to undertaking follow up activities. Attachment B contains detailed descriptions of action items and assignments agreed to by participants.

Programs and Practices

- Assess opportunities for bringing water efficiency opportunities into programs delivering comprehensive energy efficiency assessments and upgrades for existing homes, such as Home Performance with ENERGY STAR.
- Define the concept (content and cost) of an energy and water savings kit that could be promoted by program administrators.
- Develop program guidance to promote broader deployment of commercial food service equipment incentive programs as a proven model for advancing water and energy efficiency objectives.
- Assess the status of current efforts to leverage water and energy utility account representatives in communicating dual water/energy savings benefits to customers. Share information and lessons learned from such efforts as they progress.
- Assess water and energy links with green programs and determine how best to ensure consistency/coherence of goals and messages.
- Consider developing new informational guides or repackaging existing guides to promote a better understanding of the energy- and water-saving benefits of relevant products.
- Share information on best practices for programs offering financing support for efficiency upgrades.
- Share information on existing initiatives underway to promote water efficiency as part of a strategy for addressing unaccounted-for water and related water system infrastructure issues, such as EPA's Sustainable Water Infrastructure initiative.
- Assess the energy used for irrigation (including, but not limited to, embedded energy) and the major opportunities that efficiency in irrigation use and pumping might have for both energy and water savings.

Metrics

- Develop metrics that show energy savings from saving water (embedded energy) for use in program design, communications, and as a policy driver.
- Contribute to the development of a nationally-standardized approach for evaluation, measurement, and verification (EM&V) of savings associated with energy- and water-efficient measures.
- Continue to discuss strategies for supporting the development of more robust practices for evaluating water savings attributable to efficiency programs.

- Determine whether currently-available water and energy cost/savings calculators are consistent, and whether water and energy opportunities are both effectively integrated into current tools.
- Promote real time metering as a more common practice.

Policy

- Assess what is needed to put water efficiency on an equal regulatory footing with developing new water supply infrastructure.
- Continue to discuss regulatory and ratepayer equity issues associated with water/energy collaboration and identify areas where future activities could help to address these issues (for example, supporting the development of mechanisms for trading savings credit, etc.).

Items for Future Discussion

Several issues were raised that the group did not have time to discuss. These issues should be identified for discussion in the future.

- Joint labeling initiatives for water and energy efficiency (for products such as clothes washers)
- Expanding water and energy collaboration with ENERGY STAR Portfolio Manager (a tool to manage both water and energy consumption in buildings).
- Expanding water and energy collaboration using the ENERGY STAR Rebate Finder.

Participants were enthusiastic in their support for this first collaborative meeting, and found it a valuable opportunity to exchange information and generate new ideas. Participants agreed in the value of continuing the dialog on this topic and monitoring progress toward completion of ongoing action items. To that end, EPA was asked to provide the following continued facilitation of this dialogue:

- convene quarterly conference calls to share updates on the status of ongoing action items, and
- consider organizing another in-person meeting on the topic of joint water/energy efficiency initiatives after a reasonable amount of time.

Attachment A: Attendee List

Water Efficiency Attendees

First Name	Last Name	Organization Name
Sheila	Frace	US EPA, Office of Water
Allison	Costa	US EPA, Office of Water
Mary Ann	Dickinson	Alliance for Water Efficiency
Bill	Christiansen	Alliance for Water Efficiency
Al	Dietemann	Seattle Public Utilities
Richard	Harris	East Bay Municipal Utility District
Kent	Sovocool	Southern Nevada Water Authority
Bruce	Hallin	Salt River Project
Cindy	Moe	Denver Water
*Dan	Strub	City of Austin, Texas
Toby	Roy	San Diego County Water Authority
Roy	Sieber	ERG (facilitator)

Energy Efficiency Attendees

First Name	Last Name	Organization Name
Kathleen	Hogan	US EPA, Office of Air and Radiation
Karen	Schneider	US EPA, Office of Air and Radiation
Ed	Wisniewski	Consortium for Energy Efficiency
John	Taylor	Consortium for Energy Efficiency
Elizabeth	Newell	San Diego Gas and Electric
Jim	Grevatt	Efficiency Vermont
Doug	Holton	Salt River Project
Melisa	Marks	Southern California Gas Company
Jerrel	Gustafson	Austin Energy
Susan	Stratton	Energy Center of Wisconsin
Erinn	Monroe	ComEd
Sandra	Henry	ComEd
*Andy	Doeschot	PG&E
Audrie	Washington	US EPA, Region V
Roger	Kanerva	US EPA, Region V
Melissa	Hulting	US EPA, Region V
Claire	Cowan	ICF (contract support)

*Attendee participated by phone.

Attachment B: Action Items and Assignments

Programs and Practices

1. Bring water opportunities into Home Performance programs (programs delivering comprehensive energy efficiency assessments & upgrades for existing homes).
 - Near term next steps:
 - AWE - Create/develop “wish list” of info for CEE to collect on this program area.
 - CEE - Survey members to determine what they are currently doing with home performance programs.
 - AWE - Follow on steps to define what the water opportunities are, and what a standard water/energy home assessment would look like.
2. Define energy and water savings kit concept.
 - Near term next steps:
 - EPA - Put together energy and water savings kit concept – standard recommendation for what a kit would look like and estimated cost.
3. Commercial kitchens as proven program model for water & energy collaboration.
 - Near term next steps:
 - CEE - Put together a program design guide packaging existing info/resources.
 - Mid term next steps:
 - EPA - Explore opportunities for developing new specifications for energy- and water-efficient CFS products.
4. Getting water/energy utility account reps involved in promoting dual water/energy savings (“one stop shop”):
 - Near term next steps:
 - AWE/EBayMUD/SRP - Gather info on what’s going on in the industry now (esp. sharing results from CA pilot once underway).
 - Mid term next steps:
 - [Not assigned] - Develop training module providing education on energy & water savings opportunities and best practices (ensuring proper reward systems are in place, etc).
5. Consider water & energy links with green programs and determine how best to ensure consistency/coherence of goals and messages.
 - Mid term next steps:
 - EPA currently looking into this issue on the energy side; topic for further discussion.
6. Need for better mutual understanding of energy and water benefits of relevant products
 - Near term next steps:
 - EPA - Consider repackaging ENERGY STAR Guide for Restaurants as general energy/water saving informational resource for customers.
7. Financing/funding best practices.
 - Near term next steps:
 - EPA - Share existing ENERGY STAR resource on financing programs to support energy efficient improvement in the residential market (posted).
 - Mid-term next steps:
 - [Not assigned] - Develop clearinghouse for success stories (SMUD, SoCal Gas, Northeast, etc).
8. Unaccounted for water losses/system infrastructure as driver for programs.
 - Near term next steps:
 - Share AWWA RF studies on this topic.
 - EPA’s Sustainable Water Infrastructure initiative is working on this issue (<http://www.epa.gov/waterinfrastructure/index.html>).
9. Agricultural efficiencies –
 - Near term next steps

- CEE's Industrial Program Planning Committee will evaluate water and energy efficiency opportunities in the agriculture sector--including irrigation.¹

Metrics

1. Develop metrics that show energy savings from saving water (embedded energy) for use in program design, communications, and as policy driver.
 - Near to mid-term - disseminate info as it becomes available:
 - EPA energy/water report (posted).
 - AWE - Share info on Pacific Institute model.
 - CA utilities - Water/energy pilot in CA (July 08-09).
2. National standardization of EM&V approach.
 - Near term next steps:
 - EPA - Share information on similar work that was done related to energy EM&V (posted).
 - EPA - Share link to AWWA RF/NYSERDA report - Energy Index Development for Benchmarking Water & Wastewater Utilities (link posted).
 - Mid term next steps:
 - Begin discussion on how to adapt standardized energy EM&V approaches for water.
3. Promote real time metering as a more common practice
 - Near term next steps:
 - SNWA - Share information about GE "Dashboard" – residential real time monitoring device. Honeywell developing similar product. PG&E proceeding with "smart meter" device.
 - Mid term next steps
 - Monitor development of emerging technologies and opportunities for influencing specs/requirements.
4. Need better/more recent metrics for estimating water savings.
 - Near term next steps:
 - Continue discussion on this topic and how to address general lack of funding for water program evaluation.
5. Determine whether currently-available water and energy cost/savings calculators are consistent, and whether water and energy opportunities are both effectively integrated into current tools.
 - Near term next steps
 - EPA – Take stock of what is in existing ENERGY STAR calculators for products with water & energy implications.
 - Mid term next steps
 - EPA - Improve/upgrade calculators if needed.

Policy

1. Assess and evaluate what is needed to put water efficiency on an equal regulatory footing with developing new infrastructure:
 - Near term next steps
 - EPA - Share information about EPA's National Action Plan for Energy Efficiency (NAPEE) process with water attendees (posted).
 - EPA - Share info on Water Evaluation and Planning (WEAP) model (posted).
 - Mid term next steps
 - Encourage water utilities to share portfolio/plans on regional/local level with energy utilities to identify opportunities for mutual benefit.
2. Address regulatory/ratepayer equity issues associated with collaboration (develop mechanisms for trading savings credit, etc.).

¹ CEE's Industrial Program Planning Committee and its Municipal Water/Waste Water Committee (which works on pumping systems) are addressing the energy savings opportunity of irrigation.

Attachment C: Agenda

EPA Water-Energy Meeting
Wednesday March 5, 2008 - 8:30 am – 5:00 pm
Ralph Metcalfe Federal Building
Lake Superior Room, 12th Floor
77 W. Jackson Boulevard
Chicago, IL 60604

Objective: To bring together leaders in both energy efficiency and water efficiency to share information and strategies and refine program models to meet both energy and water saving objectives. To discuss federal efficiency programs (ENERGY STAR and WaterSense) and whether they can be further leveraged to improve efficiency. To look to the future and discuss new ways that water and energy utilities can work together.

Introductions (8:30 - 9:15)

EPA Introduction (Office of Water, Office of Air and Radiation)

Kathleen Hogan, EPA/OAR

Sheila Frace, EPA/OW

Water Efficiency Introduction– Richard Harris, East Bay Municipal Utility District

Energy Efficiency Introduction – Jim Grevatt, Efficiency Vermont

Roundtable Introductions

Residential Appliance Programs (9:15 – 9:45)

Al Dietemann, Seattle Public Utilities

Home Retrofit/Audit Programs (9:45 – 10:45)

Bruce Hallin, Salt River Project

Jerrel Gustaffson, Austin Energy

Break 10:45 – 11:00

Commercial Kitchen Initiatives (11:00 – 12:00)

Richard Harris, East Bay Municipal Utility District

Melisa Marks, Southern California Gas

Lunch (12:00 – 1:00)

Facilitated Discussion (1:00 – 2:30)

We'll discuss key issue identified during the morning, including barriers to partnership and possible solutions.

Break 2:30 – 2:45

Facilitated Discussion Continued (2:45 – 3:30)

What other products, services, or sectors are ripe for partnership?

- Commercial, Institutional, and Industrial Buildings
- New Homes
- Others?

Wrap Up/ Next Steps (3:30 – 5:00)

-Where to go from here? What synergies exist? What models have been identified that could be replicated in other parts of the country? What concepts need additional research or a pilot?